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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,712	02/06/2002	Mark C. H. Lamorey	BUR920010092	7578

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HOFFMAN WARNICK & D'ALESSANDRO, LLC
3 E-COMM SQUARE
ALBANY, NY 12207

EXAMINER	
NGUYEN, KIMBINH T	
ART UNIT	**PAPER NUMBER**
2671	

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/683,712	LAMOREY ET AL.	
	Examiner	Art Unit	
	Kimbinh T. Nguyen	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to amendment filed 07/16/04.

2. Claims 1-18 are pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanehira et al. (6,212,671).

Claim 1, Kanehira et al. discloses a method of verifying a data preparation for an article constructed of design layers (the layout is verified in layout verifying step ST5 shown in fig. 1; col. 13, lines 40-43; col. 21, lines 32-33), the data being in terms of an instruction algorithm (logic circuit forming regions), comprising: restating the instruction algorithm in terms of at least two fundamental algorithms (the first and the second logic circuit forming regions; col. 14, lines 45-47); creating a graphical representation for each fundamental algorithm (a graphic data processing operation is carried out to increase the sizes of the first logic circuit forming region 101...; col. 14, lines 12-26; col. 15, lines 14-25); combining the graphical representations corresponding to each fundamental algorithm according to the restated instruction algorithm to form a combined graphical representation (the graphic information is added for correction to the information about the well walls 108b and 208b; using a logical AND; col. 15, lines 55-67); determining

whether the data preparation is correct based on the combined graphical representation the graphic information is added for correction to the information about the well walls 108b and 208b produced in well wall mask pattern to obtain a mask pattern; col. 15, line 55 through col. 16, line 22); determining includes electronic comparison between the combined graphical representation and a graphical representation based on the article (col. 19, line 13 through col. 21, line 7). Kanehira teaches the final mask pattern layout (layer article) data for forming the bottom wells 108 and 208 is determined on the basis of information about increased region (col. 15, lines 14-25), (this feature related to combined graphical representation by adding graphic information for correction). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a logical operation as taught by Kanehira for adding information to verify a data prepared information, because the layout is verified in layout step, if there is no nay problem in the layout, the layout obtained in the foregoing steps is stored in a layout storage means to use the layout data for fabricating the semiconductor IC device with built-in DRAM. Consequently, manual designing work is unnecessary and artificial mistakes can be prevented (col. 21, lines 32-46).

Claim 2, Kanehira et al. discloses organizing the instruction algorithm according to group theory operators (logical operations: AND, OR, exclusive; col. 7, lines 57-60).

Claims 8 and 9, Kanehira et al. teaches implementing the combined graphical representation and comparing the result to the article; comparing the combined graphical representation of the article (col.1 5, lines 46-60).

Claims 10-12, the rationale provided in the rejection of claims 1, 8 and 9 is incorporated herein.

5. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanehira et al. (6,212,671) in view of Chang et al. (6,757,645).

Claims 3 and 6, Kanehira does not teach a polarity, etching and mask; however, Chang et al. discloses determining a polarity of the product (positive serif, negative serif; col. 24, lines 2-5; lines 27-28); the article is for one of an etching and a mask (fig. 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate polarity, etching and mask taught by Chang into the verified step of Kanehira, because, it would produce a simulated etching image (col. 16, lines 5-9).

6. Claims 4, 5, 7, 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanehira et al. (6,212,671) in view of Woolbright (5,640,497).

Claims 4, 5 and 7, Kanehira does not teach inverting; however, Woolbright discloses inverting the combined graphical representation prior to the determining step (col. 9, lines 58-67); restating is a reiterative process (using software products; col. 3, lines 32-37); the article includes discrete segments (the polygon data is capable of being broken down into polygon segments, and subsegments (col. 1, lines 58-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the inverting (movement of a polygon or graphic representation) taught by Woolbright into the verified step of Kanehira for inverting the polygon data, because, it would allow the polygon data (graphical representation) movement formulas to be adjusted to any IC process (col. 9, lines 54-55).

Claims 13-18, the rationale provided in the rejection of claims 1, 3, 4, 7-9 is incorporated herein. In addition, Kanehira does not teach a computer usable medium; however, Woolbright teaches a computer usable medium having computer readable program code (col. 10, line 56 through col. 11, line 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the inverting (movement of a polygon or graphic representation) taught by Woolbright into the verified step of Kanehira for inverting the polygon data, because, it would implement the system and method the opportunity to review data being input into the system to be processed by the apparatus and method (col. 11, lines 6-8).

Response to Arguments

6. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

The rejection of claims 1-18 has been modified in this Office Action.

With respect to applicant's arguments, Woolbright teaches polygon data such as squares or rectangular (graphical representation), because in the specification, the graphical representation is described as are rectangular (paragraph 28-30 and fig. 4).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimbinh T. Nguyen whose telephone number is (703) 305-9683. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 18, 2004

Kimbinh Nguyen

Patent Examiner AU 2671